

[2.0058]

NEW CAVERNICOLOUS *Kleptochthonius* spp. FROM VIRGINIA
(Arachnida, Pseudoscorpionida, Chthoniidae)¹

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Through the courtesy of Dr. John R. Holsinger, I have received for study a number of specimens of pseudoscorpions from caves in eastern United States. Here I wish to report on one previously described and two previously undescribed species of *Kleptochthonius* (*Chamberlinochthonius*) from these collections. Types of the new species are deposited in the American Museum of Natural History. This work has been supported in part by a grant (GB 17964) from the National Science Foundation.

***Kleptochthonius* (*Chamberlinochthonius*) *henroti* (Vachon)**

Two female specimens were taken in Blue Springs Cave, ½ mile northwest of Mill Point, Pocahontas County, West Virginia, 2 September 1967, by J. R. Holsinger and R. Baroody. They appear to conform in major characteristics with specimens of *K. henroti*, which has heretofore been known only from caves in Greenbriar County (see Muchmore, 1965). This represents, therefore, an extension of the known range of the species about 20 miles to the northeast.

K. henroti has been found also in the following additional caves in Greenbriar County:

Grapevine Cave, two miles north of Lewisburg; one male, collected by J. Holsinger and D. Newson.

The Hole, near Frankford; one male, collected by J. M. Rutherford.

Benedict's Cave, 1.5 miles southeast of Maxwelton; two deutonymphs, collected by J. M. Rutherford.

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Kleptochthonius (Chamberlinochthonius) anophthalmus NEW SPECIES

(Figures 1 and 2) [Omitted in journal article]

Material: Holotype female (WM 467.01001) found by J. R. Holsinger in Porter's Cave, about 7.5 miles WSW of Millboro, Bath County, Virginia on 30 December 1960.

Description of female: A moderate-sized species, similar in general facies to others of the subgenus, but without eyes or eyespots.

[The journal article omits here the detailed description and measurements.]

Male: Unknown.

Remarks: This species is readily distinguished from most others in the genus by the complete absence of eyes or eyespots. It shares this characteristic with *K. (C.) gertschi* Malcolm and Chamberlin (1961), the only known specimen of which is from Gilley Cave, Pennington Gap, Lee County, Virginia. *K. anophthalmus* may be separated from *K. gertschi* on the basis of its smaller size (palpal femur 0.90 mm vs. 1.082 mm long), less attenuated appendages (1/w ratio of palpal femur 6.0 vs. 7.2), and fewer setae on the cheliceral palm (7 vs. 9).

Also at hand is a tritonymph from Madison Cave, Augusta County, Virginia (collector, T. C. Barr, Jr.) which may represent another new species of *Kleptochthonius (Chamberlinochthonius)*; however, because it is not in perfect condition, I refrain from describing it at the present time. Suffice it to mention here that it has a short, bilobed process on the movable chelal finger and appears to be without eyes, but that other characters preclude its being the nymph of *K. anophthalmus*.

Kleptochthonius (Chamberlinochthonius) regulus NEW SPECIES

(Figures 3 and 4) [Omitted in journal article]

Material: Holotype male (WM 1613.01001) and two paratypes, a female and a deutonymph, collected by J. R. Holsinger in Fallen Rock Cave, about two miles SW of Pounding Mill, Tazewell County, Virginia on 9 November 1968.

Description of male: A large, slender species, similar in general facies to others of the subgenus.

[The journal article omits here the detailed description and measurements.]

Female: Very similar to male in most particulars, but slightly larger.

[The journal article omits here the detailed description and measurements.]

Deutonymph: This specimen bears the same general relation to the adults described here as the deutonymph of *K. charon* does to adults of its species (see Muchmore, 1965, p. 18).

[The journal articles here omits the measurements.]

Remarks: As pointed out in an earlier publication (Muchmore, 1965), the species of *Kleptochthonius (Chamberlinochthonius)* can be grouped according

to the size and shape of the process on the dorsal edge of the proximal end of the movable chelal finger. Thus, the two species known from Greenbrier County, West Virginia, namely *K. henroti* and *K. proserpinae*, have large, bifurcated processes on the movable fingers, while the two species known from Monroe County, West Virginia, and eastern Kentucky, namely *K. orpheus* and *K. krekeleri*, have processes which are long and simple. On the other hand the large number of species from extreme southwestern Virginia, central Kentucky and Tennessee have very short, slightly bilobed processes. Remarkably, the two new species described above resemble in this respect, not their nearest neighbors in West Virginia, but the short-processed forms, the closest of which are from Lee County, Virginia. As a matter of fact, the present species, *K. regulus*, seems morphologically most like *K. rex* Malcolm and Chamberlin (1961) which is known only from Bunkum Cave, Byrdstown, Pickett County, Tennessee. It can be separated from that species by its slightly smaller size (palpal femur 1.30 mm vs. 1.47 mm long), greater number of setae at the posterior margin of the carapace (four vs. two), and stronger development of the microdenticles on the chelal fingers.

The explanation of the distribution mentioned above is not yet known. As Dr. Holsinger has pointed out to me (in litt.), theoretical dispersal barriers are much greater between the caves of central Tennessee-Kentucky and the Virginia Appalachians than between those of the Virginia and West Virginia parts of the Appalachians. However, if pseudoscorpions do not often move from one cave to another, but rather the populations in individual caves have been derived independently from locally endemic, surface populations, then the distribution of cave forms may simply reflect the occurrence on the surface of diverse ancestral forms at some time(s) in the past. Since practically nothing is yet known about the distribution of present day, epigeal forms of the genus (that is, those placed in the nominate subgenus), there is no other information available about the relationships of the cavernicolous species.

Literature Cited

- Malcolm, D. R. and J. C. Chamberlin 1961. The pseudoscorpion genus *Kleptochthonius* Chamberlin (Chelonethida, Chthoniidae). American Mus. Nov., no. 2063, pp. 1-35.
- Muchmore, W. B. 1965. North American cave pseudoscorpions of the genus *Kleptochthonius*, subgenus *Chamberlinochthonius* (Chelonethida, Chthoniidae). American Mus. Nov., no. 2234, pp. 1-27.

Descriptors: Arachnida; Pseudoscorpionida; Chthoniidae; *Kleptochthonius* (*Chamberlinochthonius*) *anophthalmus*; *Kleptochthonius* (*Chamberlinochthonius*) *regulus*; *Kleptochthonius* (*Chamberlinochthonius*) *henroti*; Cavernicoles; Virginia; West Virginia.